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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
09/145,180	09/01/98	LI	J 23356-M5

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HM12/0524

EXAMINER

WANG, S

ART UNIT	PAPER NUMBER
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1617

DATE MAILED:

14  
05/24/00

**Please find below and/or attached an Office communication concerning this application or proceeding.**

**Commissioner of Patents and Trademarks**

# Office Action Summary

Application No.

09/145,180

Applicant(s)

LI ET AL.

Examiner

Shengjun Wang

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).

## Status

- 1) ☐ Responsive to communication(s) filed on Jan. 21, 2000 & March 15, 2000.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-183 is/are pending in the application.
- 4a) Of the above claim(s) 1-98, 108, 110-112, 114-119, 122-124, 126-135, 137 and 143-183 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 99-107, 109, 113, 120, 121, 125, 136 and 138-142 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claims \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are objected to by the Examiner.
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. § 119

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).
- a) ☐ All b) ☐ Some \* c) ☐ None of the CERTIFIED copies of the priority documents have been:
1. ☐ received.
2. ☐ received in Application No. (Series Code / Serial Number) \_\_\_\_\_.
3. ☐ received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

- 14) ☒ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. & 119(e).

## Attachment(s)

- 14) ☐ Notice of References Cited (PTO-892)
- 15) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 16) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2-7.
- 17) ☐ Interview Summary (PTO-413) Paper No(s) \_\_\_\_\_.
- 18) ☐ Notice of Informal Patent Application (PTO-152)
- 19) ☐ Other:

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### **DETAILED ACTION**

1. Applicant's election with traverse of invention group I, claims 99-155 in Paper No. 11 submitted January 21, 2000 is acknowledged. The traversal is on the ground(s) that search of entire claims is not seen as a undue burden on the examiner. This is not found persuasive because the inventions are directed to divergent subject matters, i.e., compounds and compositions, method of making the said compounds, and method of treating or preventing disorder related to PARP activity and the search required for the claimed compounds is not required for the claimed methods, and search required for the claimed methods of treating or preventing disorder related to PARP is not required for the claimed methods of making the said compounds. Note here that the search is not limited to the patent files.

The requirement is still deemed proper and is therefore made FINAL.

2. Applicant's election without traverse of species of claim 125 with a mode of delivery of sterile solution for intravenous administration for treating ischemia/reperfusion in Paper No. 13 submitted March 15, 2000 is acknowledged.

3. Claims 1-98 and 156-183 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected inventions, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in Paper No. 11 submitted Jan. 11, 2000.

4. Claims 108, 110-112, 114-119, 122-124, 126-135, 137, 143-155 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected species, there

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being no allowable generic or linking claim. Election was made **without** traverse in Paper No. 13 submitted March 13, 2000.

***Claims Rejections 35 U.S.C. - 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 99-107, 109, 113, 120-121, 125, 136, 138-142 are rejected under 35 U.S.C. 103(a) as being unpatentable over Weltin et al. (AT of page 5, IDS paper No. 3) in view of Suto et al (AR, IDS paper No. 4) and Endres et al. (AT of page 2, IDS paper No. 3).

Weltin et al. (AT of page 5, IDS paper No. 3) teach that 6(5H)-phenanthrindinone, an isoquinoline derivative, is a potent inhibitor of poly(ADP-ribose) polymerase (PARP). See the abstract.

Weltin et al. do not teach expressly the employment of a substituted 6(5H)-phenanthrindinone, i.e., 10-amino-2-nitro-6(5H)-phenanthrindinone, for treating ischemia.

However, Endres et. al. (AT of page 2, IDS paper No. 3) teach a method of treating ischemia by inhibition of PARP activity. See page 1144, third paragraph. Suto et al. (AR, IDS paper No. 4) teach a method of optimization of PARP inhibiting activity of isoquinoline derivatives. The method comprising adding various substituents, e.g., nitro and amino groups, to isoquinoline derivatives. See, page 109, table 1.

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Therefore it would have been prima facie obvious to a person of ordinary skill in the art, at the time the claimed the invention was made, to employ substituted 6(5H)-phenanthrindinone, e.g., 10-amino-2-nitro-6(5H)-phenanthrindinone for treating ischemia

A person of ordinary skill in the art would have been motivated to employ substituted 6(5H)-phenanthrindinone, e.g., 10-amino-2-nitro-6(5H)-phenanthrindinone for treating ischemia because 6(5H)-phenanthrindinone is a known potent PARP inhibitor and PARP inhibitors are known to be useful for treating ischemia disorder, a derivative of 6(5H)-phenanthrindinone is reasonably expected to be similar useful. Furthermore, since optimization of PARP inhibiting activity of isoquinoline derivatives by amino and/or nitro substituents is known in the art, a person with ordinary skill in the art would have been reasonably expected to optimize of PARP inhibiting activity of 6(5H)-phenanthrindinone by adding amino and/or nitro group to 6(5H)-phenanthrindinone. 10-amino-2-nitro-6(5H)-phenanthrindinone is seen as a optimized variation of phenanthrindinone and such optimization is considered within the skill of artisan, absent evidence to the contrary. Finally, developing a method for administration is considered within the skill of artisan.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shengjun Wang, Ph.D. whose telephone number is (703) 308-4554. The examiner can normally be reached on Monday-Friday from 8:30 to 5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Minna Moezie, J.D., can be reached on (703) 308-4612. The fax phone number for the organization where this application or proceeding is assigned is (703) 308-4556.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-1235.

Shengjun Wang

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May 10, 2000

  
MINNA MOEZIE  
PRIMARY EXAMINER